



Bellwether Magazine

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University of Pennsylvania

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Sports Medicine For

HORSES

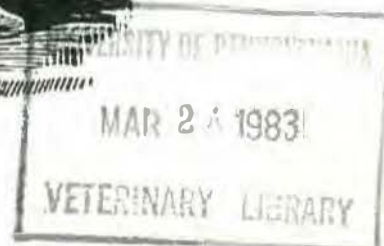
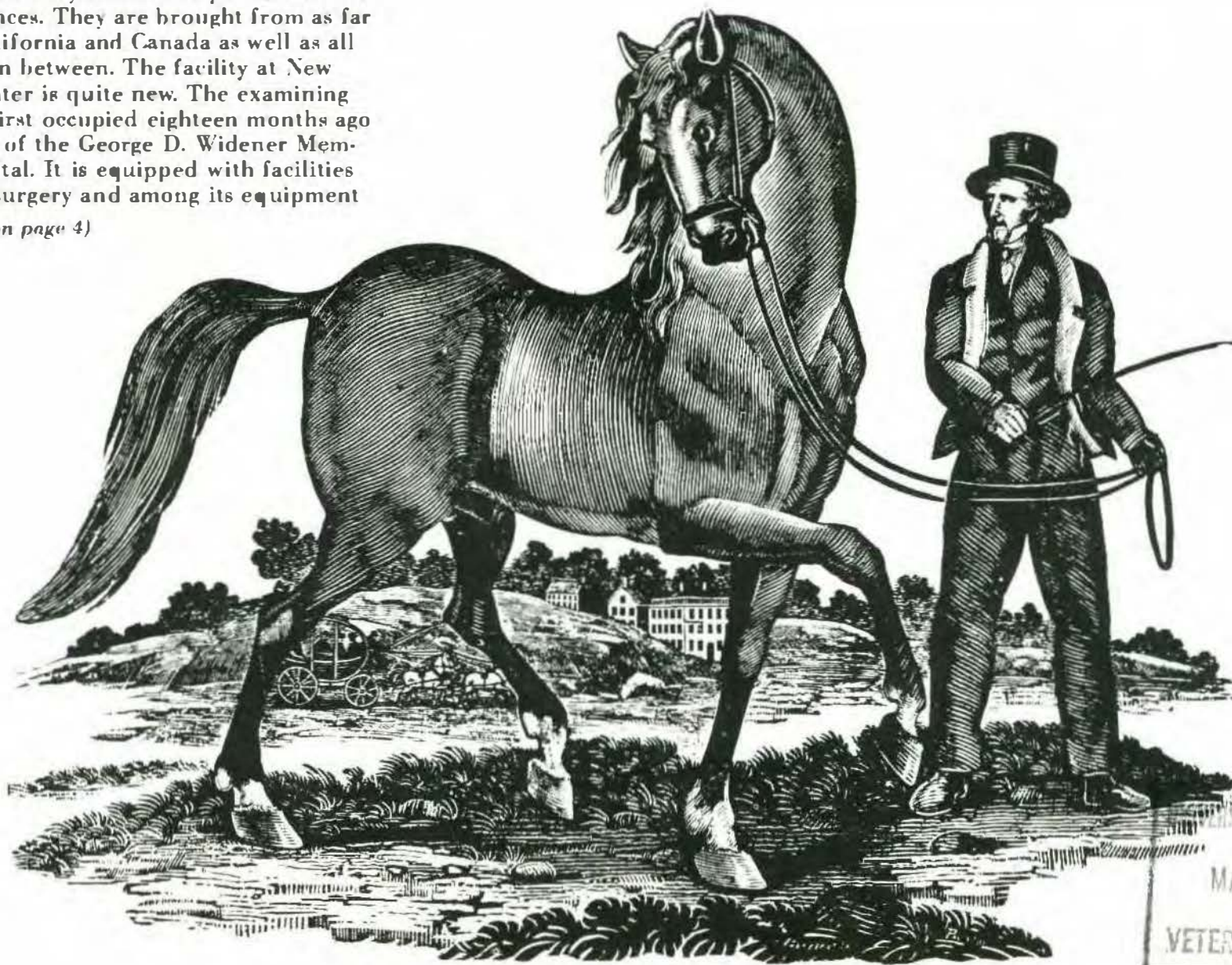
A horse is slowly gaited in the parking lot, back and forth, and then a bit faster at the request of an athletically built man. He is casually dressed, shirt sleeves rolled up and has an easy-going, relaxed manner. "That's enough," he calls, "bring him in."

The horse is led into a huge examining room, the clip-clop of the hooves silenced by heavy rubber matting. The man in shirt sleeves carefully examines the front leg and then orders x-rays.

This is William Moyer, D.V.M., at work, doing what he does every weekday—examining and treating horses. He is head of the Equine Out-patient Clinic at New Bolton Center. "I am basically involved in sports medicine for equine athletes," he explains. "My patients are race horses, jumpers, hunters, and carriage horses. You name a sport a horse is engaged in and we have seen its participants."

"The concept of an outpatient clinic for horses is a reasonably new one at a large hospital," Dr. Moyer said. His patients travel great distances. They are brought from as far away as California and Canada as well as all the states in between. The facility at New Bolton Center is quite new. The examining room was first occupied eighteen months ago and is part of the George D. Widener Memorial Hospital. It is equipped with facilities for minor surgery and among its equipment

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Emergency Service At

V H U P

A couple comes home in the evening and finds that the family pet, a miniature poodle, has difficulty breathing and appears to be sick. Their regular veterinarian cannot be reached, so they contact the emergency service at VHUP. They describe the symptoms and are told to bring the dog to the hospital. When they arrive at the emergency service waiting room and check in, it is noted that the animal is in critical condition. A technician immediately takes the dog to the treatment room and a student escorts the couple to another room to take the case history. While this is being done the dog is examined and readied for emergency care.

"We prefer that owners call before bringing their pet in, so we can have things set up and start treatment at once if necessary," explained Rebecca Kirby, D.V.M., head of emergency service at VHUP. This approach is similar to one used in emergency rooms in human hospitals. Indeed, the atmosphere and equipment in the emergency room at VHUP are reminiscent of any hospital emergency room. There are examining tables, EKG equipment, IV drip stands, and trays with sterile equipment. There are no beds, but a number of cages are available to accommodate the patients.

Many of the emergencies are also similar: heart failures, car and fight injuries, gunshot wounds, broken bones, and a host of problems which can occur in animals and humans alike, while some of the cases treated occur only in animals. The big difference between veterinary and human emergencies is that the veterinarian deals with a variety of species and patients that cannot explain their own problems. The doctors at VHUP must rely on the owners to obtain vital background information.

"When an animal is brought in, the most important thing is to stabilize it quickly and to diagnose the problem," Dr. Kirby said. "We have a specially trained staff here which is available around the clock. In addition we can consult with any specialist needed."

The miniature poodle is a typical case. It is ten years old and has congestive heart failure. After the initial examination and diagnosis it is placed into the oxygen cage, a piece of equipment large enough to hold a giant dog. Here the amount of oxygen can be carefully regulated making it easier for animals with heart problems to breathe. The controls on the cage also permit the adjustment of humidity of the air in the cage, a therapeutic aid for animals with respiratory problems.

Once the dog is placed in the cage and is breathing easier, the intern discusses the problem with the owners. "We proceed with definitive treatment after we have discussed the diagnosis and therapy with the owner and have received authorization to do so," Dr. Kirby said. In this case, treatment includes medication to dilate the air passages, diuretics to reduce the fluids in the

lungs, and digoxin to strengthen the heart muscle. Between treatments the dog is returned to the oxygen cage. Later, when it is stable, an EKG and x-rays are taken. These facilities are available around-the-clock.

An animal with congestive heart failure may also be connected to a heart monitor with an oscilloscope to permit close monitoring of the condition. The service also has special equipment which monitors an animal's body temperature and blood pressure. Later, bloodtests are done to determine liver and kidney function. The emergency service has full laboratory services until 10:00 p.m. daily. After 10:00 p.m. simple tests can be executed but the more complicated ones are held until the laboratory opens the next morning.

Often a critically ill animal, such as the miniature poodle, is transferred to the intensive-care unit of the hospital once it is stabilized. Here it is closely watched and any changes are reported at once to the intern in emergency service so that decisions regarding the animal's treatment can be made quickly. Should elaborate diagnostics such as an echocardiogram or an angiogram be required, the cardiologist on duty may be consulted at any hour of the night. In the morning, the dog is transferred to the cardiology service which then assumes responsibility for the case. "Very frequently such an animal can be stabilized on heart medication and do well at home," Dr. Kirby said.

This particular dog is just an illustration of one type of case seen in the emergency service. Another case of critical nature is gastric dilatation which requires prompt attention and often surgery if the animal is to be saved. "We have a sixty percent success rate quoted by the surgeons," Dr. Kirby said.

Many cases seen involve injuries received when an animal has been hit by a car. These animals are often in shock and have to be stabilized before surgery or elaborate diagnostics can commence. "It is a very intense situation, one must make the right decisions quickly and one must know what to do next if something doesn't work," Dr. Kirby explained. "We see patients around-the-clock, it is a steady stream. The busiest time is between 6:00 p.m. and 2:00 a.m. People come home and discover that their pet is ill and that their veterinarian is not available. Also, many animals run free and are injured by cars." During the period of July 1, 1981 to June 30, 1982, the emergency service saw over 5,200 cases. Currently, up to thirty cases are seen per day and this can increase to fifty or more on weekends and holidays.

Still another category of patients are those animals referred by veterinarians for special treatment or a diagnosis. These ani-



Dr. Rebecca Kirby examines a radiograph in the emergency room

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imals are often too ill to wait for an appointment in the regular clinics and are admitted to the specialties through the emergency service. "Many veterinarians utilize this service," Dr. Kirby said. "It is a speedy way of getting a critical animal admitted."

The emergency service sees many species of animals, ranging from cats and dogs to hamsters, gerbils, exotic pets, and wildlife. The latter are transferred to the student-run Wildlife Service at the hospital. Sometimes animals with contagious diseases are brought in and placed in the special isolation unit at the hospital.

In addition to seeing patients, the staff also provides information over the telephone in an attempt to determine whether an illness is really an emergency. "We often can help by phone, but we will see an animal if the owner feels it is a life-threatening situation," Dr. Kirby explained.

Dr. Kirby arrived at VHUP in August from San Diego, California, where she was

one of several veterinary specialists at an emergency hospital. She has restructured the service at VHUP. "We have three rotating shifts, twelve hours each, for the three interns on duty during the week. On week-ends three different interns rotate these shifts. These run from 6:00 a.m. to 6:00 p.m. with an overlapping shift from 2:00 p.m. to 2:00 a.m., so that two interns are on duty during the busiest time," Dr. Kirby said. "In addition there are three nurse-technicians who similarly rotate shifts. The nurse-technicians are trained to handle injured animals and perform many tasks, freeing the interns to take care of the critical problems." Students also share the work and are active participants in patient care.

As part of the curriculum, students spend two weeks on duty at the emergency service on rotating eight-hour shifts. They interview the owners, examine the animals, and discuss their findings with the intern or clinician who makes the final diagnosis and

determines treatment. It is an intense learning experience for students and the School is the only one which has a twenty-four-hour emergency service. Because the Veterinary School is located in an urban center, a great variety of cases are seen here making the program valuable training. Many students come from other schools to work in the emergency service to receive this special training.

Dr. Kirby is on call around-the-clock. "Animal illness and injury creates a very emotional situation for owners because it can be acute and is often unexpected. Because we provide quick, efficient service and have a wonderful back-up from the specialties here, owners of the animals feel that everything that can be done is being done."

Emergency service is open 24 hours a day, every day of the year, and it can be reached by calling (215) 898-4685.

Endowed Chairs

One of the major steps in the evolution of the School of Veterinary Medicine to a position of world prominence has been the development of endowed chairs. The first was the Lawrence Baker Sheppard Professor of Surgery in 1967, and the most recent was the Grace Lansing Lambert Professorship in Cell Biology. The following is a list of endowed chairs and the present occupant:

- Corrine R. and Henry Bower Professor of Medicine (Nephrology): Kenneth C. Bovee, D.V.M., M.Med.Sc.
- Jacques Jenny Associate Professor of Orthopedic Surgery: David P. Nunamaker, V.M.D.
- Charlotte Newton Sheppard Professor of Medicine: Donald F. Patterson D.V.M., Ph.D.
- Lawrence Baker Sheppard Professor of Surgery: Charles W. Raker, V.M.D.
- Mark Whittier and Lila Griswold Allam Professorship: William Donawick, D.V.M.
- Elizabeth and William Whitney Clark Professor of Nutrition: David S. Kronfeld, B.V.Sc., M.V.Sc., Ph.D.
- Grace Lansing Lambert Professorship in Cell Biology: Leon Weiss, B.S., M.D.

Bellwether Circulation

Some readers have the impression that *Bellwether* has a restricted circulation within the School and to alumni. Not so! *Bellwether*, which is published quarterly, has a circulation of 12,700 and is

mailed to alumni, legislators, state and federal officials, horse and livestock breeders, dog and cat breeders, and a number of associations devoted to the care and raising of animals.

12,700

China Trip

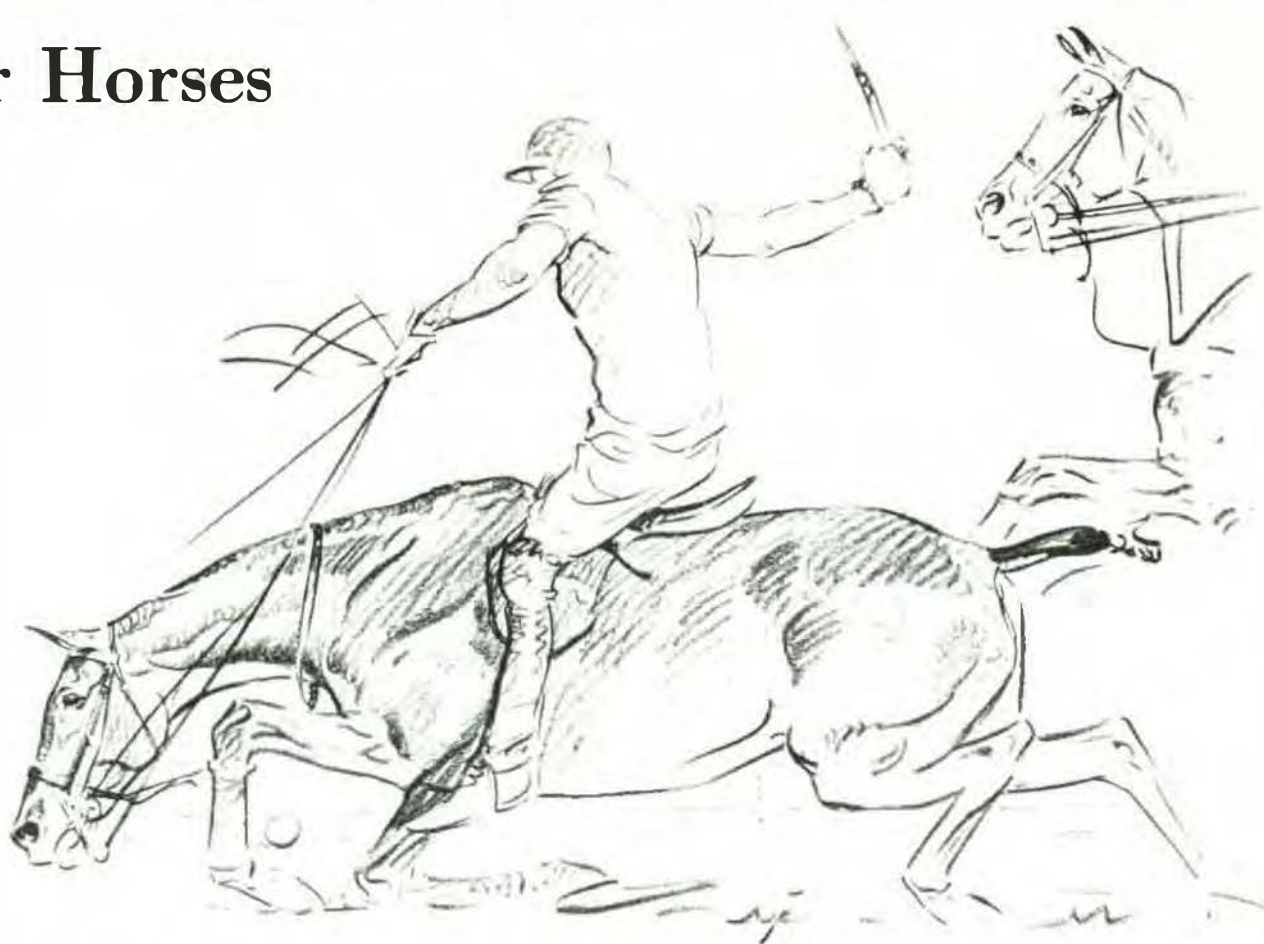
Dean Robert R. Marshak spent October 23 to November 13, 1982, in the Peoples Republic of China. The invitation for Dean Marshak to visit China was tendered by the Director of the Bureau of Science and Technology, Ministry of Agriculture. More about this in our next issue!



Sports Medicine For Horses

"The beauty of horses is that they can be recycled," Dr. Moyer said.

"They can do other things besides racing or jumping. They can become a carriage horse or a pleasure horse for someone. Many of the injuries manifest themselves only if top speed is demanded time after time. So a retired competition horse can still have a useful, enjoyable life."



(continued from cover)

is a portable x-ray machine which is frequently used to examine horses' legs.

Dr. Moyer has been the director of the clinic for three years. He sees about six cases a day. "Most cases are referred to the outpatient clinic as diagnostic problems," he said. Owners have invested a great deal of their time and resources to raise and train each horse and bring it to peak performance levels. They come to the clinic when performance slackens.

"In racing, the difference between winning and losing is very small, it's only fractions of a second, or of a headlength. Even a slight drop in performance keeps a horse out of the money," he said. Horses are very prone to injuries. "It's a matter of bio-mechanics," he explained. "When you combine the weight with the speed you can see that damage can easily occur. These horses can run at forty mph." He explained that about eighty percent of the race horses have some kind of injury; joint damage and joint disease are common. It is his job to diagnose and treat the horse to restore it to a condition which will allow it to return to competition and hopefully return the owner's investment.

A race horse is started twenty-five to thirty times a year. "One must always keep this aspect in mind when making a diagnosis and prescribing treatment," he said. "You treat a race horse different than a draft horse, just as a physician would use a different approach for the treatment of the same leg injury in a track star or an office worker." Another thing to be kept in mind is the kind of training to which the horse is subjected. There is a significant difference between the training of a dressage horse and a steeplechase horse. There are differences in the demands made on the muscles, bones, and tendons of these horses. All of this is considered in the diagnosis and the choice of treatment to be recommended to the owner.

Dr. Moyer also has to keep in mind the economics of the situation. The owner or trainer may not be able to afford what may be considered the ideal therapy. Race horses are professional athletes and time away from competition can be very costly. Therefore, it is important to be realistic with the owner. "The beauty of horses is that they can be recycled," Dr. Moyer said. "They can do other things besides racing or jumping. They can become a carriage horse or a pleasure horse for someone. Many of the injuries manifest themselves only if top speed is demanded time after time. So a retired competition horse can still have a useful, enjoyable life."

The majority of injuries presented to Dr. Moyer involve the legs. Horses injure their bones, tendons, joints, and muscles. They are prone to joint damage due to the wear and tear from rigorous training and competition. Another problematic area is the foot. Foot problems are probably the leading cause of lameness," Dr. Moyer said. "That's not surprising when you think about it. A foot has an area of five to seven square inches which touches the ground. This supports the entire weight of the horse throughout its activities." He explained that wild horses are less prone to hoof injuries as they run continually and keep hooves and feet in shape. "Domestic horses do not exercise continually, and so their feet are weaker and their shoes are used as support." Horseshoes are a big part of therapy, and according to Dr. Moyer, corrective horseshoes are vital to the industry. "Each shoe is tailor-made to the foot and for the problem."

In addition to special shoes he may prescribe swimming as an exercise to keep the animal in shape. "It's a very good way to keep a horse fit, while decreasing weight bearing on the limbs."

Not all the problems presented to Dr. Moyer deal with the leg. "Horses are often presented with back problems. They are difficult to diagnose; these horses are often very hard to handle, and some are downright nasty." He sees performance problems which are not related to the musculo-skeletal system. If they cannot be dealt with on an outpatient basis, the horse is hospitalized; if it is

a medical problem, the horse is referred to another specialist.

"We have here the largest number of specialists of any facility treating horses in the world," he said. "We are centrally located, only a few hours from major Eastern racing centers and areas of other horse activities."

Dr. Moyer obviously loves his work and cares very much for the animals. "I have a great interest in athletics and am involved in competitive sports. It was natural that I gravitated to animal athletes because I understand a little more about it and have empathy."

Appointments for the Equine Outpatient clinic, which is open Mondays through Fridays, can be made by calling (215) 444-5800, Ext. 405 or 406.



Dr. William Moyer

Some Notes On Cats

Cats are excellent companion animals and they are becoming part of an increasing number of households. While personality and suitability should always be considered, coat color and color variations are often the deciding factors in selection.



"Tabby" describes the pattern of cat coats in a number of different breeds. Though the color and complexity of the pattern may vary, there are stripes on the head, body, legs, and tail. The letter M can be traced on the top of the head and the outline of a butterfly over the shoulders.

Cat color has been carefully studied and plays an important part in breeding programs. Legend has it that all white cats are deaf. While deafness does occur in some white cats, selective breeding keeps the condition under control.

Apart from pattern and color, cat coats are usually classified as Shorthair or Longhair. Of course, there are variations in each group. The Somali is a Shorthair with a medium length coat while the Red coat is short and distinctly curly, and the American Wirehair has a dense, harsh, wiry coat. The Persian is the best known Longhair. Magnificent as it is, its coat can become matted and tangled unless groomed regularly. The Birman, a less familiar Longhair, may eventually become a preferred pet as it is said to have a coat that does not mat.

Peculiarities in the cat world are the tailless Manx and the stubby-tailed Japanese Bobtail. The Manx possesses a rabbit-like gait and is said to be an excellent swimmer.

Coat pattern, color, and tail—all serve to distinguish a companion animal continuously chosen by humans since the time of the ancient Egyptians.

Improving the Breed

Over 150 genetic defects have been identified in purebred dogs and the list is growing. Most of these disorders cannot be prevented or treated by medical procedures. The only way to eliminate them is by using unaffected animals in breeding programs.

A *dominant* trait is easy to control by selection of animals not showing the trait for breeding. A *recessive* trait may be carried unseen in the animal and transmitted to half of the offspring. Complications in this relatively simple process occur in the form of *polygenic* traits which come from the combined action of a number of genes.

As breeders seek ways to maintain and improve their strains, they find help in texts to detect inherited eye diseases and bleeding disorders as well as metabolic defects.

Pedigree studies are of great value in control programs. Breed Clubs can be of great help in this respect. A record of every animal in a pedigree should be studied to determine the most important problems in the breed. Conformation and behavior

should be considered as well as actual disease conditions. Once the ideal has been determined, breeding stock can be evaluated.

The American Kennel Club's new plan to improve judging calls for the expertise and commitment of parent breed clubs. The plan includes development of illustrated standards, reading lists and other educational material. The ability to recognize the "perfect" specimen of a breed is essential. With this knowledge, we can work on elimination of undesirable qualities.

F. D. Hutt's *Genetics for Dog Breeders* (W. H. Freeman and Co., San Francisco, CA, 1979) is recommended reading.

Much that has been written is opinion rather than fact, and may include information that is incorrect, outdated, or taken out of context. It always is better to use reference material from a scientific publication and check to be sure it is current. An excellent series of articles was published in the June 1982 *Pure-Bred Dogs—American Kennel Gazette*. This should be required reading for everyone concerned with breeding pure-bred dogs.

Kennel Clubs of other countries recognize breeds considered "rare" in the United States. The United Kennel Club in Kalamazoo, Michigan registers dogs of hunting breeds and others not recognized by the American Kennel Club, including American Eskimo, American Pit Bull Terrier, Toy Fox Terrier, American Fox and Coonhound, Bluetick Coonhound, English Coonhound, Plott Hound, Redbone Coonhound, and Treeing Walker Coonhound. It has been reported that these breeds will be recognized by the Canadian Kennel Club, which registers a number of breeds which cannot be registered with the American Kennel Club such as the Pudelpointer, Nova Scotia Duck Tolling Retriever, Finnish Spitz, Eskimo and Mexican Hairless.

Other "rare breeds" are the Canaan Dog, Lowchen and Chinese Shar-Pei. There are any number of pure-bred dogs and many registries other than the American Kennel Club. However, in the United States, the American Kennel Club is the governing body for registration and dog shows.

Admirers of the Jack Russell Terrier might note that these extremely popular small working terriers are not considered pure-bred.

Veterinary Hospital (VHUP) Patient Statistics

During the twelve-month period ending June 30, 1982, the total number of visits and admissions to the Veterinary Hospital (VHUP) was 18,956. The large majority of the patients were dogs, but several thousand cats were seen as well as many exotic species (birds, rabbits, rodents, reptiles, primates, skunks, and ferrets).

The largest number of cases were presented for different types of tumors, followed closely by fractures and other injuries caused by automobiles. There were 161 cases of hypo- or hyper-thyroidism, 132 cases of atopic skin disease and 170 blocked cats. Parvovirus disease was diagnosed in 93 patients. There were 137 cases of cystitis and 143 animals with cataracts. Idiopathic epilepsy was

diagnosed in 111 cases. Periodontal disease was treated in 84 patients. There were 40 cases of distemper.

Fleas and intestinal parasites were frequent problems. Seen during the year were animals with pneumonia, lead poisoning, gunshot wounds, hypertension, gastric ulcers, encephalitis, and glaucoma.

Poisonous Plants

Plant poisoning, although not common in animals, can occur because of potentially harmful house and garden plants. Dogs and cats frequently will eat grass with no ill effects. Household pets, particularly puppies and kittens, tend to chew almost anything that seems interesting. Sometimes, this is a sign of boredom or even a means of getting attention.

The possibility of plant poisoning is something to be aware of but rarely a cause for alarm. Gastrointestinal symptoms can be produced by azalea, ornamental bulbs (tulip, daffodil, etc.), mistletoe, and poinsettia. Some other plants cause clinical signs—such as nettle toxicity in hunting dogs and even marijuana poisoning where individuals purposely involve their pets in the drug experience.

Crackers

Catnip is a non-poisonous plant which causes peculiar behavior but has no toxic effect.

Grass awns (foxtail is a common one) can cause mechanical damage by penetrating ears, nose, conjunctiva, or even unbroken skin especially between the toes. They cause much discomfort until removed.

Poison ivy and poison oak do not cause skin irritation in animals, although the pet may carry the irritating material on its coat and "transmit" it to the owner. Cattle, horses and other herbivores eat the plant with no ill effect, but contact with the feces may expose humans to the irritant.

If poison is suspected, be able to identify the probable cause. In the case of plants, chewing the leaves does not necessarily mean actually ingesting them. There are poisonous household plants, but there is an alarming list of additional poisonous materials in the house and garden. Fortunately, most dogs and cats are not attracted to plants. The large majority of cases are reported as isolated instances—something "new" to report.

If your veterinarian suspects poisoning, there is an Animal Poison Control Information Center at the University of Illinois. Their number is 217-333-3611.

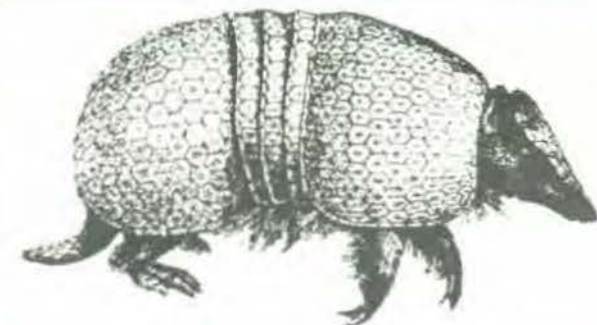
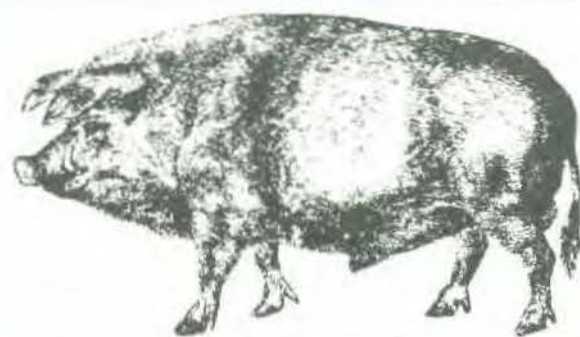
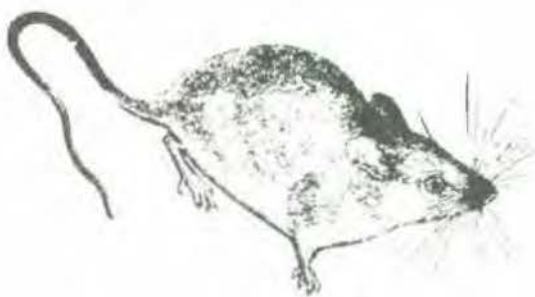
Dog Breeds

There are probably more than 400 breeds of dogs recognized in different countries of the world. In 1981, the American Kennel Club registered 1,033,849 dogs. The most numerous were Poodles, Cocker Spaniels, Doberman Pinschers, German Shepherds, and Labrador Retrievers. A total of 125 breeds were registered. Miscellaneous breeds, which cannot be registered or compete for championship points, are Australian Kelpies, Border Collies, Cavalier King Charles Spaniels, Miniature Bull Terriers, Pharaoh Hounds, Portugese Water Dogs, Spinoni Italiani and Tibetan Spaniels.

The Medical Records Department classifies all cases by species, breed, age, sex, origin (Philadelphia, Pennsylvania, New Jersey, Delaware, Maryland, etc.) and by primary and up to three additional diagnoses. The information is of great value in studying the incidence of disease in different breeds and by checking increased incidence in different areas. For example, they can tell an investigator how many cases of parvovirus disease occurred in a certain area and which breeds were affected. Records from all cases seen for the past five years are readily available, and older records can be retrieved from storage.

HAPPY NEW YEAR

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1 9 8 3



At a faculty meeting on July 17, 1945, Dr. A. Newton Richards, vice president for medical affairs at the University, announced that he was in receipt of a letter from Dean George A. Dick indicating that he wished to resign as soon as someone could be found to replace him. Dr. Dick had served the School faithfully for fifteen trying years and had strived valiantly to improve its situation. However, he had received little support from the University, and without this support, his efforts were severely limited. Those who knew Dr. Dick well, report that he was not reluctant to give up the deanship, and, in fact, was relieved to do so.

In a meeting with the subcommittee of the Alumni Society Departmental Committee, in 1945, Dr. Richards acknowledged that neither he nor others in the University had given the School the support that it needed, but that his future goal would be to create a Veterinary School of the first order. In preparation for the future, Dr. Richards, accompanied by Dr. John D. Beck, professor of medicine, visited several veterinary schools in order to inspect their physical plants and become more familiar with their programs. Dr. Richards also consulted with a committee of the Alumni Society, chaired by Dr. Samuel F. Scheidy, to elicit recommendations for a new dean.

At an Alumni Society meeting on January 8, 1946, Brigadier General Raymond A. Kelser was introduced as Dr. Dick's successor. In his remarks to the Society, Dr. Kelser stressed that "in order to maintain a faculty at top proficiency, it is important to promote research work." This was one area in which the School had been very deficient. Dr. Kelser had an established background as a researcher and administrator, two of the qualities which the University desired in a dean for the Veterinary School.

In agreeing to come to Penn, Dr. Kelser had obviously been given assurances by the University that he would receive a measure of support which had not been given to his predecessor. Evidence of this was shown by immediate increase in the semiannual state appropriation, and the erection of a third floor on the north wing of the quadrangle building. During the six years in which Dr. Kelser served as dean, there was a marked upswing in the quantity and breadth of research. Dr. Kelser personally received a grant from the Grayson Foundation for work on equine infectious anemia, and Drs. David K. Detweiler and John E. Martin conducted a study on the action of atropine in the horse under a contract to the Army Chemical Center. Drs. Evan L. Stubbs and Alfred Wallbank were the recipients of a grant from the U.S. Cancer Research Institute for research on Strain 13 chicken sarcoma virus, and Dr. Mark W. Allam was engaged in comparative studies in the Medical School on peripheral nerve paralysis. Most important, Dr. Detweiler and Dr. John T. McGrath initiated their work in cardiology and neuropathology, respectively, a prelude to major research efforts that would take place during the next three decades.

Dean Kelser was an abrupt, authoritative individual, a decided contrast to Deans Louis A. Klein and George A. Dick. His approach was so different that it disturbed some older members of the faculty and some alumni. However, younger faculty believed that his methods offered an oppor-

Development Office Activities

tunity for the School to progress. One of Dean Kelser's first moves was to secure all departmental budgets in the Dean's Office, and to announce that funds would be available only to those who produced. He followed this by declaring that in the future the faculty would not be permitted to take the entire summer as a vacation period. These were rather stern measures when compared to life at the Veterinary School in the previous thirty-five years! Despite the fact that Dean Kelser "ruffled some feathers," he provided the type of medicine the School needed in 1946.

Dean Kelser died suddenly on April 16, 1952 and was buried at Arlington Cemetery with full military honors. His stay at the Veterinary School was brief but it pointed the way to a brighter future. Upon his death, Dr. Mark W. Allam was appointed acting dean.



*Dr. Raymond Kelser
Dean, 1946-1952*

*Dr. A. Newton Richards
Former Vice President for
Medical Affairs*



The School of Veterinary Medicine closed its books on June 30, 1982, having raised \$5,979,000 in new gifts and subscriptions from the private sector.

This total includes \$3.191 million from individuals, and major among these were the gifts establishing the Elizabeth and William Whitney Clark Chair in Nutrition and the Grace Lansing Lambert Chair in Cell Biology.

The School also received \$658,000 from corporations, \$2,031 million from foundations, and \$99,000 from associations.

Annual Giving received \$195,941 from 761 donors, and 1,114 gifts to the Friends of the Small Animal Hospital totaled \$64,035. Gifts totaling \$41,793 from 106 donors were made to the Friends of New Bolton Center and the Kline Center Fund.

We received grants totaling \$20,000 from the Mrs. Cheever Porter Foundation for metabolic studies in medical genetics and to establish the Mrs. Cheever Porter Internship in the Small Animal Hospital. Dr. Robert Washahan, V'82, was named the first Mrs. Cheever Porter Intern.

The Dietrich Foundation awarded a grant of \$3,000 to the aquatic veterinary medicine program, and the Knapp Foundation supported this program with a grant of \$36,595.

The Animal Rescue League of Philadelphia has awarded us an additional grant of \$2,100 for equipment for the Intensive Care Unit in the Small Animal Hospital. The Robert H. Winn Foundation for Cat Research awarded \$5,000 to Dr. David Knight's project on echocardiographic study of cardiomyopathy in cats.

An additional grant of \$5,000 from the Janet A. Hooker Charitable Trust will support continued research on kidney disease in the dog, and a gift of \$1,000 from the Harrisburg (PA) Kennel Club will help equip a new hematology laboratory in the Veterinary Hospital.

Throughout the year, we receive many gifts from many canine and feline organizations. Most of these are for the Friends of the Small Animal Hospital, and the following clubs contributed to this fund in the year ending June 30th:

Allentown Dog Training Club (PA)
American International Border Collie Club
American Bouvier des Flanders Club
Anne Arundel Kennel Club (MD)
Australian Terrier Club of America
Back Mountain Kennel Club (PA)
Badger Kennel Club (WI)
Berks County Kennel Club (PA)
Boardwalk Kennel Club (NJ)
Bucks County Kennel Club (PA)
Bucks-Mont Owner Handler Association (PA)
Bull Terrier Club of Philadelphia
Capital Cat Fanciers Club (DC)
Carroll Kennel Club (MD)
Cat Fanciers Club of Washington
Catonsville Kennel Club (MD)
Columbia Kennel Club (SC)
Dayton Kennel Club (OH)
Devon Dog Show Association (PA)
Doberman Pinscher Club of the National Capital Area

Dog Owners Educational League (NJ)
Dog Training Club of Maryland
Dog Training Club of York (PA)
Durham Kennel Club (NC)
Elm City Kennel Club (CT)
Empire Alaskan Malamute Club
Forsyth Kennel Club (NC)
Fox Terrier Club of Maryland
Galaxy Cat Club (CA)
Garden State Siberian Husky Club (NJ)
Golden Valley Kennel Club (CA)
Greater Lancaster Feline Fanciers Club (PA)
Greater Miami Dog Club
Greater Philadelphia Dog Fanciers Association

Greenwich Kennel Club (CT)
Hathoro Dog Club (PA)
Hyattsville Dog Training Club (MD)
Keeshond Club of the Delaware Valley
Keeshond Club of Palisades (NJ)
Kennel Club of Buffalo,
Kennel Club of Philadelphia
Kennel Club of Texarkanna
Kennesaw Kennel Club (GA)
Keystone English Spring Spaniel Club (PA)
Ladies Kennel Association of America
Laurel Highlands Kennel Association (PA)
Lehigh Valley Kennel Club (PA)
Lenape Tracking Club (NJ)
Liberty Bell Cat Club (PA)
Long Island Owner Handler Association
Long Island Kennel Club
Longview Kennel Club (TX)
Los Encinos Kennel Club (CA)
Luzerne Dog Training Club (PA)
Maryland Boxer Club
Mason-Dixon German Shorthaired Pointer Club (MD)

Mattaponi Kennel Club (VA)
Mid-Atlantic Basenji Club
Monmouth County Kennel Club (NJ)
Montgomery County Kennel Club (PA)
National Capital Kennel Club
New Brunswick Kennel Club (NJ)
New Jersey Boxer Club
New-Penn-Del Newfoundland Club
Northwestern Connecticut Dog Club
Olean Kennel Club (NY)
Pennsylvania Federation of Dog Clubs
Pembroke Welsh Corgi Club of America
Potomac Afghan Hound Club
Potomac Valley Standard Schnauzer Club
Progressive Dog Club of Wayne County (MI)
Putnam Kennel Club (NY)
San Fernando Kennel Club (CA)
Sand and Sea Kennel Club (NJ)
San Gabriel Valley Kennel Club (CA)
Soft Coated Wheaten Terrier Club of America
Somerset County Dog Obedience Club (NJ)
South Jersey Dog Obedience Club
Staten Island Kennel Club
Suburban Dog Training Club (PA)
Yosemite Kennel Club (CA)

Other kennel, breed, and cat clubs have given restricted gifts—in support of medical genetics, the scholarship fund, the virus diagnostic laboratory, ophthalmology—and these will be listed in the next issue of *BELLWETHER*.

Diagnostic Laboratory

One sick chicken poses a serious threat to an entire flock. When you're in the business of raising chickens or other fowl for profit, poultry disease can spell economic disaster. That's why many poultry farmers and cooperatives bring their ailing birds to Dr. Robert J. Eckroade, New Bolton Center's poultry expert.

Dr. Eckroade, associate professor of poultry pathology, heads the Poultry Pathology Laboratory on Byrd Road across from the sprawling rural campus of the University of Pennsylvania's large animal hospital. It is one of four regional diagnostic laboratories in the state, two other Pennsylvania Department of Agriculture affiliated laboratories are located in Doylestown and at Pennsylvania State University. There is also a state laboratory in Harrisburg.

"The laboratory serves three major functions," explained Dr. Eckroade, who also directs the business activities of the American Association of Avian Pathologists as secretary-treasurer of the organization, which makes its headquarters at the laboratory site.

"We provide a poultry diagnostic service to area poultry farmers, cooperatives and veterinarians. We also provide an educational service, teaching vet school students and sponsoring poultry education programs for the public. The smallest component of our work right now is research."

The poultry laboratory is partially funded through an annual grant from the Pennsylvania Department of Agriculture's Bureau of Animal Industry to support diagnostic services only. Competitive grants from the U.S. Department of Agriculture and the Pennsylvania Department of Agriculture help to fund poultry research programs.

Poultry is a major industry in Pennsylvania, which is the third- to fourth-largest table-egg producing state in the country. With an agricultural economy dependent on healthy animals, there is an acute need for veterinarians who specialize in poultry medicine and can provide expertise in poultry disease control.

According to Dr. Eckroade, most practicing veterinarians have had little poultry training or experience. While poultry medicine is broadly covered in the veterinary curriculum at many schools, it is rarely studied at any depth.

At the University of Pennsylvania, poultry medicine is a required course for sophomores, and additional elective courses are offered in advanced study and in senior rotation programs at New Bolton Center. Dr. Eckroade designed a two-year residency program specializing in poultry diseases and how to prevent them.

"Veterinary medicine had essentially deserted the poultry industry," said Dr. Eckroade. "The huge cooperatives have a critical need for this specialty and fewer than a hundred veterinarians literally manage poultry disease control in the United States. So the industry has long relied on their own

servicemen and non-veterinary experts for disease control."

While much medical treatment, including flock vaccinations, is routinely handled by lay servicemen, there are serious problems that threaten an entire flock and require the services of a trained veterinarian.

"When a serviceman can't solve a problem or there is the threat of an epidemic, he will bring us a sample of ill birds which are sacrificed. Then we conduct a necropsy examination to try to identify the problem before an entire flock is affected," explained Dr. Eckroade.

Frequently he and his staff are called out to the field, where they can get a first-hand look at management operations. Often they will select a group of ailing birds at the site for necropsies.

According to Dr. Eckroade, many infectious poultry diseases are nutritional in origin or management-related. While there are classic virus infections like Newcastle disease, infectious bronchitis, laryngotracheitis and fowl pox, for which vaccines have been used for years, there have also emerged in the past ten years, new diseases caused by reo and adeno viruses, about which too little is known.

Besides student instruction, the poultry laboratory also provides educational services to area poultrymen through poultry management programs at Penn State University and at local agricultural meetings. Responding to the needs of poultrymen locally and from New Jersey and New York, the laboratory will serve anyone who needs help with a poultry problem, including the owners of pet birds, which veterinarians are seeing more of, Dr. Eckroade noted.

"We charge the cooperative a \$10 fee per case. Sometimes two or three cases are brought in by a serviceman representing different problems on different farms," he said. "The small farmer is often unable to keep up with the state of the art and generally relies on a middle agent or serviceman."

"Since we don't want to discourage the backyard farmers from utilizing our diagnostic services, we don't charge them. Nor do we charge the pet bird owners, who are often distraught at discovering their expensive investment has contracted a disease."

"Our maxim is 'prevent the disease, rather than treat it,' which represents the epitome of disease control," said Dr. Eckroade. "One of the most important factors in controlling the spread of poultry diseases is sanitation. In some cases, humans are responsible for transmitting many poultry diseases from one chicken house to another. In our education programs, we stress the need for proper sanitary procedures in poultry houses. Disinfectant spraying of houses between flocks and wearing boots, a hat, and coveralls before entering and leaving the houses can prevent the spread of disease."

While noting that the backyard chickens are still a major factor in the outbreak of poultry epidemics, resulting in high mortal-

ity and economic loss, Dr. Eckroade has seen outbreaks in the big co-ops, too.

"We had an outbreak of disease in a large chicken house last fall," he recalled. "They lost about 10,000 birds and the cause was traced to visitors who came to look at equipment."

"We reiterate the importance of isolation-rearing management or what we sometimes refer to as 'don't let the clown in the chicken house.' Another cause of disease is the result of inadequate vaccination programs."

While Dr. Eckroade prefers and has a few of his own "backyard" chickens, he emphasizes that this method of raising poultry is no longer economically feasible. The modern approach to large-scale poultry raising operations has been attacked by animal rights groups as cruel and inhumane. In such operations, fowl are raised in close confinement, sometimes in wire cages. Their beaks



"We provide a poultry diagnostic service to area poultry farmers, cooperatives and veterinarians. We also provide an educational service, teaching vet school students and sponsoring poultry education programs for the public."

are trimmed and artificial lights used to induce longer egg laying periods, increasing considerably their normal production.

"Grandma's chickens ran free, but they also laid far fewer eggs, and not uncommonly, were eaten by a fox or dog. If we had to survive on what Grandma got for her eggs, we'd be in economic trouble. Actually, the wholesale price for a dozen eggs hasn't changed significantly in twenty to thirty years," he noted.

The new intensive farm methods of raising fowl produce healthier birds but also permit the potential for serious outbreaks of disease because so many birds live together (30,000-80,000 per farm is typical in Pennsylvania). While close confinement can produce more stress, production managers can better monitor health, initiate treatment very early, and obviously, predators are no longer a problem.

With 80,000 birds typically being inoculated by lay servicemen, there is a serious

need to monitor vaccination programs to prevent future outbreaks of disease. Vaccines are administered in a number of ways, including individually by eye drop or wing web stab, which is expensive.

Other less expensive methods involve adding vaccine to drinking water or spraying the air of the chicken house, which is absorbed through the birds' eyes and lungs.

Research facilities of the poultry laboratory include twelve replicate "colony houses." These 14' x 14' wooden houses were donated to New Bolton Center about three years ago by CEVA Laboratories. Poultry industry donations were used to move them here from the Chicago area, and refurbish them with concrete floors, water, heat, electricity, and new roofs. Another two-room tight-isolation building was constructed four years ago. This building has a filter air positive pressure sys-

tem in order to work with more serious infectious diseases.

Although it is not yet on line, Dr. Eckroade anticipates the implementation of a new automated technology called "Enzyme Linked Immuno Sorbent Assay" (ELISA) system to monitor poultry for disease problems.

The advantage of ELISA over conventional laboratory tests is that it is far more sensitive and accurate. ELISA uses very small volumes of sera and is adaptable to an automated system thus enabling the laboratory to use larger sample sizes that can be analyzed in a shorter time period. The automated system can also provide a printout of test findings.

ELISA will be used for "flock profiling," health monitoring and disease identification and control. The technology will make it possible to conduct the tests in a few hours, which normally may take up to four or five days, in some conventional tests.

(continued on page 10)



Cooperative Poultry Diagnostic Laboratory

(continued from page 9)

Dr. Eckroade explained that a variety of conventional tests used to detect the amount of antibodies in the blood can be performed on ELISA not only in less time, but with considerably less expense.

While Dr. Eckroade hopes to implement ELISA over the next year, he noted that there are still some chicken antigen cross reactions occurring that have yet to be worked out. All the other mechanics are in order.

The ELISA technology, secured through competitive grants, is a cooperative project with Penn State's Dr. Richard Wilson.

Affiliated with the University of Pennsylvania since 1976, Dr. Eckroade has increased his staff from one technician to three, a caretaker and a secretary, all of whom recently moved into the new, larger headquarters on Byrd Road.

Working closely with Dr. Eckroade in the laboratory and on field problems is Dr. Linda Silverman, one of the first female poultry diagnosticians in the country. Other staffers include: Nancy Fitzkee, head technician, Pam Tully, technician, Betsy Frey, research associate, Ruth Hollodick, secretary, and David Hoffman, animal caretaker.

Originally from Virginia, Dr. Eckroade did his undergraduate work at Virginia Polytechnic Institute. He earned a master's degree and a Ph.D. degree from the University of Wisconsin and received his D.V.M. from the University of Georgia. Expressing an early interest in a small animal practice, he later had a mixed practice in North Carolina. Then he took a position in a poultry laboratory, and in his own words, "loved it."

Penn's poultry expert, Dr. Eckroade received the Lindback Award for teaching poultry diseases and was recently appointed adjunct associate professor of veterinary science at Pennsylvania State University.

But there's a lot more to the amiable, long-sideburned Bob Eckroade than "just us chickens," as the expression goes. A licensed pilot with an apparent sense of adventure, he enthusiastically described the white water rafting trip down the Colorado River he and colleagues from the New Bolton Center recently took.

On an isolated fifty-two-acre farm in Rising Sun, Maryland, he and his wife, Carlene, a research chemist for W. F. Gore and Associates, raise a few horses, chickens, and some cattle. Two sons, Bob, Jr., and Bill, and a daughter, Sherri, complete the Eckroade family.

Back on the subject of chickens, he joked, "I've often been accused of having an unnatural attraction to chickens." On a more serious note, he added, "When producers' profit margin goes down because hens stop laying eggs, you're the person they turn to for help. We can't do it all, but if we can learn to solve one person's problem, that will also help others."

ANIMAL PROFILE

Endangered Cats

At most zoos cats are the star attraction and the Philadelphia Zoo is no exception. Their family of Siberian tigers draws a crowd regularly.

Throughout the world there are seven subspecies of tigers. Of the seven the Caspian and the Bali are gone. Five remain: the Bengal, the Chinese, the Javan, the Siberian, and the Sumatran. The Bengal, with four to five thousand in the wild, is the most numerous species. Only 200 Siberian tigers live in their natural habitat. Zoos possess close to one thousand.

Panthera tigris altaica (Siberian tiger) is found in the Amur River region near the Soviet Far East and Northern China. The area consists of mixed deciduous forests and open, rocky, mountainous terrain. Siberians are solitary hunters that depend greatly on their hearing. Often they detect their prey at a distance of over 500 meters. Wild boar and red deer are their preferred meal.

The largest of the felines, Siberians usually measure six and a half feet in length and have a three-foot tail. Their average weight is 350 pounds. The record weight for a Siberian is 645 pounds. During winter they develop a layer of fat as insulation that enables them to tolerate low temperatures.

The Siberian family at the Philadelphia Zoo has an interesting history. Kunder, the male, arrived as a cub from the Leipzig Zoo, where captive breeding has been extremely successful. He weighs over 600 pounds and is about thirteen years old. Tigers live about twelve to thirteen years in the wild. In captivity their life spans nearly double.

Kunder is no stranger to the University. A couple of years ago students from the School of Dental Medicine performed root canal surgery on Kunder and capped a few of his teeth as well!

Zeya, Kunder's mate, arrived from the Milwaukee County Zoological Gardens. On July 4, 1980, she gave birth to three female cubs. They were named Martha, Abigail, and Dolly in honor of the first three presidents' wives. The girls live in separate cages near their parents. The Zoo also owns two Siberians currently at the Utica Zoo in New York.

Because of their grand size, beautiful color, and striping, Siberians are very popular in zoos. Their popularity has caused zoos to overbreed the species. Today there are more captive tigers than there are spaces available. Many zoos have stopped breeding and use a tiger version of birth control pills to prevent pregnancy.

Yet since captive tigers often live twice their normal life span, breeding may not occur until later than usual and a whole generation may be lost. The result is an unusual age distribution of cats. Also, most of the captive Siberians are descended from a relatively small gene pool resulting in a lack of genetic diversity in the animals.

The Species Survival Plan (SSP) is a controversial North American plan that provides strict guidelines for genetic purity in captive animals. This past September the International Union of Directors of Zoological Gardens met in Rotterdam. The Union asked Dr. Ulysses Seal, chairman of the Captive Breeding Specialists Group, to expand the North American plan for international use.

If the SSP is adopted internationally, the structure of zoos will change dramatically. No longer will individual zookeepers make decisions concerning the breeding of animals. They will have to consult international guidelines.

The Philadelphia Zoo would be concerned mainly with the Operation Siberian Tiger phase of the SSP. Controversy over this plan seems imminent. To create the space needed for a large genetic diversity in captive tigers that corresponds to the genetic diversity found in wild tigers, many existing Siberians would have to be euthanatized. In fact, some tigers today are so inbred that they too would not be kept.

Public reaction to the euthanatization of animals is expected to be highly critical. Recently the Detroit Zoo tried to euthanatize one of their old Siberians whose medical history was extremely poor. There was a tremendous public uproar.

If the Philadelphia Zoo subscribes to Operation Siberian Tiger, Bill Donaldson, a zoo spokesman, believes a public education campaign of the SSP will be imperative. Zoos must aid the preservation of animals and their genetic purity. According to Donaldson, the public needs to understand that without the SSP the captive Siberians of the future will be substantially different from their ancestors in the wild.

"Do Something Wild"

Pennsylvanians filing state income tax returns this year will have an opportunity to "Do Something Wild." Under legislation enacted this past summer, Pennsylvania joins several other states that allow taxpayers to designate all, or a portion of their state income tax refund to help nongame wildlife.

In line with the new Wild Resource Conservation Act signed by Governor Thornburgh last June, the revenue department has provided space on the 1982 Pennsylvania tax form where persons may contribute to the Wild Resource Conservation Fund.

Taxpayers will be able to designate what portion of their income tax refund they would like to donate to help Pennsylvania's wild resource management agencies ensure the future welfare of nongame birds, mammals, fish, reptiles, and amphibians. Revenue generated from the tax check-off will also be used to manage and protect wild plants.

Pennsylvania Game Commission personnel are pleased that the Legislature has approved the tax check-off in Pennsylvania. They are hopeful that sufficient funds will be generated to fund new and ongoing nongame programs.

Since 1979, the Game Commission has allocated about \$30,000 to aid the American bald eagle and re-introduce the peregrine falcon and osprey. Next year, the Commission plans to allocate additional funds to bring more osprey from surrounding tidewater states and to re-establish a new colony of river otters in northcentral Pennsylvania. The Wild Resource Conservation Fund could provide the money to fund these projects.

The new fund will be administered by the Wild Resource Conservation Board comprised of the executive directors of the Game and Fish Commissions, the Secretary of Environmental Resources, and the majority and minority chairpersons of the House Conservation Committee and the Senate Environmental Committee.

The Board has no way of knowing how much money will be generated by the state's new Wild Resource Conservation Act. This spring, following the filing of 1982 state income tax returns, will provide an indica-

tion of the extent to which Pennsylvania will take an active role in supporting the proper management of our state's wild resources. It is the hope of the Board that the "Fund" will be substantial, for in addition to some of the projects outlined above for the Game Commission, the Fish Commission and the Department of Environmental Resources also have much work to do to ensure the management and protection of aquatic life and wild plants under their jurisdiction.

The Department of Environmental Resources, with the creation of the Wild Resource Conservation Act, is now charged with the responsibility for the management and protection of Pennsylvania's native wild plant species. The inclusion of wild plants in the program is unique to the Pennsylvania Act. Other states which have adopted similar tax check-off funding for nongame wildlife have no provisions for wild plants in their programs.

Money allocated to the Department of Environmental Resources by the Wild Resource Conservation Board will be used to provide proper management programs to collect information and conduct research on the population, distribution, and habitat needs of native plant species and plant communities. The department is required to classify wild plants to determine management measures necessary to protect special plant populations and may establish a cooperative statewide system of public and private wild plant sanctuaries.

The Environmental Quality Board, a twenty-one-member panel of state agency officials, legislators, and citizens charged with adopting regulations administered by DER, will issue regulations relating to the taking, possessing, transporting, exporting, processing, selling or offering to sell, or shipping of wild plants.

The EQB will establish regulations over the digging, harvesting, sale, and exploitation

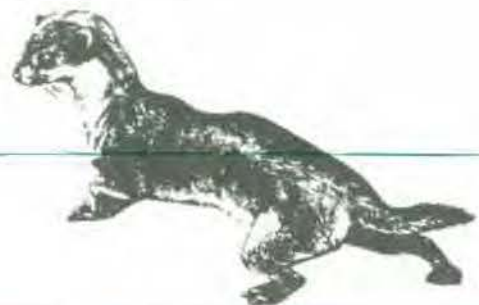
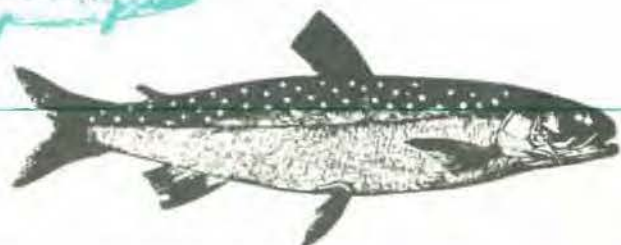
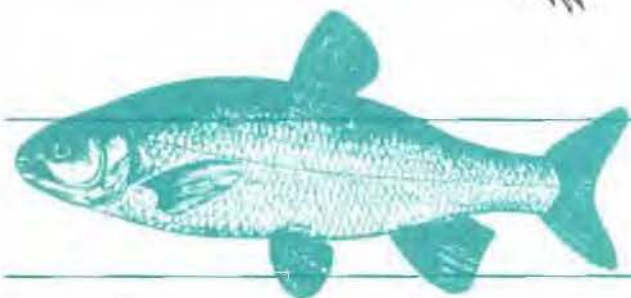
of vulnerable species in danger of being lost because of beauty, economic value, or other factors which make them prime targets for being removed from their native habitats.

The many users of our state's vast parks, game lands, forest lands, and recreation areas will receive benefit from the fund. A wider variety of animal and plant life will be available due to proper management and enhancement of habitat. The Wild Resource Conservation Fund will increase the educational and recreational opportunities for all of the citizens of the Commonwealth.

Because of Pennsylvania's unique tax structure, many taxpayers are not entitled to a refund. However, if they desire to help finance the program, those persons may contribute directly. They simply may draft a check or money order payable to the Wild Resource Conservation Fund and mail it to Comptroller, Box 2063, Harrisburg, PA, 17120.

Because of the importance of ensuring the welfare of nongame wildlife and wild-plants, the Wild Resource Conservation Board is hopeful thousands of Pennsylvanians will decide to "Do Something Wild" as they file their 1982 state income tax returns.

You may write for additional information by addressing your request to: Wild Resource Conservation Board, P.O. Box 1467, Harrisburg, PA, 17120.



The Loyal Red and Bl



Rather than presenting our usual column on Alumni Society activities in this issue, we thought our readers might enjoy hearing about two recent alumni who are engaged in some rather unusual work.

The following is from a letter received from Dr. Susan D. Morgan (V'78) who lives in Santo Domingo, Dominican Republic.

Practicing in the Dominican Republic was not exactly in my plans when I graduated from the University of Pennsylvania four years ago, but survival for a two-career family too often involves compromises. My husband is in the Cultural Section of USICA (United States International Communications Agency) and really likes his work. We get to attend all the art openings, concerts, ballets, and receptions, and the life style we enjoy here is one we could never afford in the United States.

With the Ambassador's approval I have been able to build up a small practice, mostly of English-speaking people, but a few Dominicans have been brave enough to visit the "gringa" who works on animals. I have an arrangement with a Dominican practitioner who kindly lets me use his office, and I am learning the joys and frustrations of a house-call practice. I know though that without Dr. Alba I wouldn't be working at all. It shows that there are nice veterinarians worldwide.

About three months ago I placed an advertisement in the local English paper and was asked by them if I'd like to write an advice column. The column has proven to be its own advertisement and has been fun besides. When I don't get enough questions, I just make them up.

There are many medical and veterinary students here trying to get an education. I say trying only because it seems to me that they have to fight so hard for what was handed to me on a

silver platter. It does make me realize how lucky I was to have been educated at the University of Pennsylvania. Because there are virtually no practice laws here, two of the students have their own large animal practice. They convinced me to help them do some surgery on a horse's eye while they handled the anesthesia. All went well but it was the first time I'd touched a horse since I left school. Since then I have even treated some chickens. They have asked me to do some surgical demonstrations for their class but because this is "manana" country this has been scheduled and canceled twice. It may take place in September. In the meantime I have been helping other students practice ovario-hysterectomies."

The hardest part of practice here is the language problem. I was going to say it was obtaining the medications I am used to using, but that's not really true. The drugs are here but I don't know what they are called yet. I can't seem to get prednisone or amoxicillin or betadine. So I use DepoMedrol and ampicillin and PhisoHex. Importing being what it is, the one thing I have learned is to buy quickly because what I can find one day may not be there the next.

We have an x-ray machine, which just returned from Chicago where it was repaired. It takes reasonable films. We also have a gas anesthetic machine. When I first used it I had to make a sealer out of an old rubber tire, so I've only tried once.

Dr. Alba uses pentobarbital or ketamine and ten assistants to sit on the dog. Labor is cheap here. All-in-all it could be worse. I am learning to work with what I can find and I realize how spoiled I had become working in AAHA hospitals in Oregon. Practitioners in the United States are very lucky.

In February 1983 we will be moving to Lima, Peru. Anybody have any information about llamas?

Next we would like to tell you about Dr. James Sadwith (V '77). Those of you who were fortunate enough to be tuned to the CBS/GE Theatre on Saturday, October 9, 1982, already know about Jim's current activities.

Dr. Sadwith wrote and was associate producer of the film titled "Two of a Kind," starring George Burns, Robby Benson, and Cliff Robertson. Jim tells us that this enthusiastically-acclaimed film was inspired by "the wasting away of my grandfather in a nursing home near Gladwyn during my years at the Vet School." Prior to the time the film went into production, Dr. Sadwith was doing relief work in practices all over Southern California. However, with this first film to his credit, Jim is now at work on a second production for CBS. It appears as though we have lost a veterinarian (at least temporarily) but have gained a playwright! Best of luck Dr. Sadwith!

We would like to hear from other alumni. Please drop us a note and let us know what you are doing. Thank you.

American College of Veterinary Internal Medicine

The American College of Veterinary Internal Medicine's first educational forum will take place from May 8 to 12, 1983, in New Orleans, Louisiana, at the Marriott Hotel.

This debut of an outstanding educational series will feature many timely topics in both large- and small-animal medicine, presented by nationally-known clinicians, in areas such as urology, dermatology, anesthesiology, immunization, cardiology and diagnostic techniques. The format will include addresses, conferences, and seminars. Registrants will be able to meet with speakers to discuss problem cases.

The fee for the three-day program is \$225. Full payment must be made in advance. Early registrants, prior to April 1, receive a \$25 discount. The daily rate is \$100. ACVIM candidates, residents, interns, and senior veterinary students pay \$100; early registration, \$80; daily rate, \$50. A \$50 deposit reserves hotel accommodations. Registration at the door is permissible.

Contact Dr. William J. Kay, general forum chairman, at (212) 838-8100; Dr. John E. Oliver, program chairman, at (404) 542-3221; or Ruth Asher of Alice Travel, for registration and hotel information, at (800) 526-6453.

Aquavet '82

Aquavet '82 began May 16 when thirty-two students arrived at the Swope Center at the Marine Biological Laboratory in Woods Hole, Massachusetts. Classes started that evening with an opening session and laboratory class and the group settled in for four weeks of intensive studies.

The students represented eleven veterinary schools and sixteen home states. The largest contingent came from Cornell University with ten students participating. The University of Pennsylvania was represented by eight students: Christina Dougherty, Craig J. Goldblatt, Joseph M. Groff, Bruce T. Herwald, Mary S. Lombardo, Virginia Niehuh, Keith Niesenbaum, and Catherine Pient.

Aquavet '82 was taught by thirty-seven faculty from twenty different institutions. The program was administered by Donald A. Abt, V.M.D., associate dean, School of Veterinary Medicine, University of Pennsylvania, who is director of Aquavet, and by Charles G. Rickard, D.V.M., Ph.D., associate dean for academic programs, New York State College

of Veterinary Medicine, Cornell University, who is associate director of Aquavet.

Both men are now planning for Aquavet '83. Those interested in the program should contact Donald A. Abt, V.M.D., Director of Aquavet, School of Veterinary Medicine, University of Pennsylvania, 3800 Spruce Street, Philadelphia, PA 19104.



The Profession on

TV

Television has discovered veterinarians. In a recent episode of "Seven Brides for Seven Brothers," Molly, a young veterinarian, treats a horse with spiral fractures and bone chips in the foreleg. Of course the case is very complicated. The horse gets an infection and almost dies, but ultimately recovers due to the skills of the dedicated vet. The episode doesn't stop there. Molly is interested in horses and has applied for internships. Yes, you guessed it, she is accepted at New Bolton Center. "I am so happy I have to burst—I have to tell someone. I got an internship," she gushes to one of the characters on the show. "Where?" "At New Bolton Center." "Where is that?" "At the University of Pennsylvania." "For how long?" "Two years."

That creates a problem. One of the brothers is rather fond of Molly and does not want to see her leave. But in true TV fashion, all is resolved and he approves of Molly's going to New Bolton Center.

Are you ready, New Bolton Center? For Molly the vet, and the future episode of her adventures there, perhaps a visit from the boyfriend, a romance with another intern—the possibilities are endless!

It wasn't just New Bolton which received exposure on television. Late in September, Sally Struthers, the heroine of "Gloria," a new series, came to the Small Animal Hospital to tour the facilities and chat with the staff.

"Gloria" is a series about a single woman who is embarking on a new career as a veterinary assistant. She works in a practice which not only sees companion animals but also some small farm animals. Each episode brings numerous complications for Gloria as she pursues her new vocation. She is guided by Burgess Meredith who plays the kind veterinary practitioner.

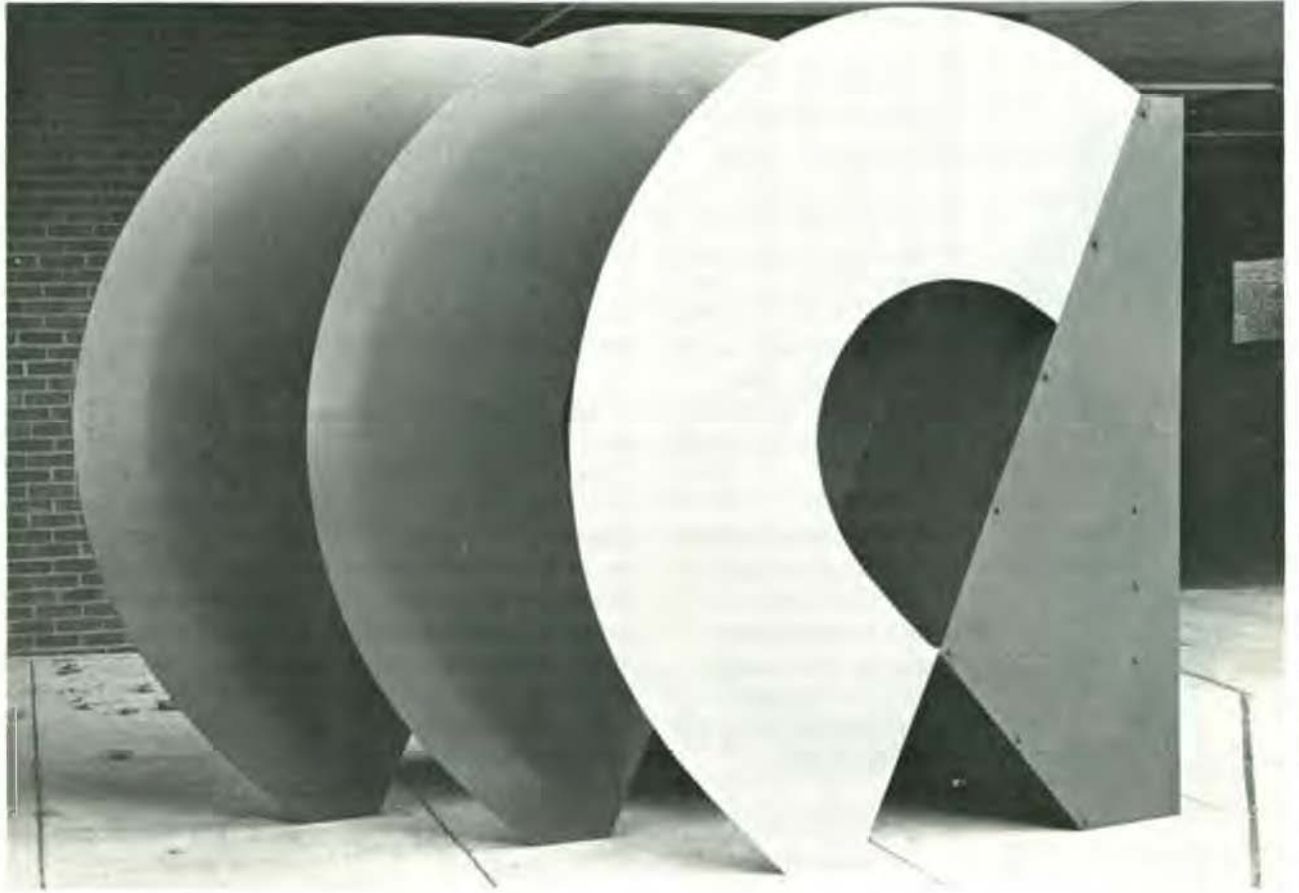
Ms. Struthers spent a few hours at VHUP and created quite a bit of excitement as she greeted clients and their pets waiting for treatment. She was shown around the new facility by Kenneth Bovee, D.V.M., M.Med.Sc., chairman of the Department of Clinical Studies, who answered her many questions about the building, the equipment, and the patients at VHUP. The whole visit was taped by the TV station for a broadcast later in the year.

Perhaps this exposure of the veterinary profession on TV will do for it what Woodward and Bernstein (the reporters who broke the Watergate story) did for journalism schools—applications soared to dizzying heights.



Sally Struthers and Dr. Kenneth Bovee

The Lifesavers



Photography by Charles A. Tucker.

The space in front of VHUP has been enlivened by the addition of a large sculpture, "The Lifesavers," which was donated to the Veterinary School by art patrons Philip and Muriel Berman of Allentown, PA. In accepting the gift Dean Robert R. Marshak said, "We hope it will lift the spirits of our clients as it adorns the hospital entrance with a distinctive piece of contemporary art."

Mr. and Mrs. Berman were recipients of the Hazlitt Award which Governor Richard

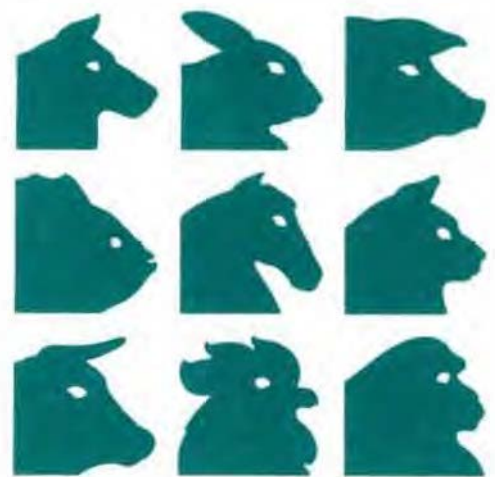
Thornburgh presented in recognition of their achievements as "Patrons of the Arts."

"The Lifesavers" is the work of sculptor Billy Lawless. It measures 8 feet long, by 7½ feet wide, by 10 feet high, and is constructed of plate steel painted red, yellow, green, and black. The elements of the sculpture present a different appearance from every angle, enticing the viewer to walk around the piece.

The Centennial Year

It is not too early to begin to make preparations for our 100th anniversary in 1984. This will be a year-long celebration featuring a number of outstanding events. Dr. Donald F. Patterson is chairman of the Centennial Committee and Dr. John E. Martin is director of the newly established Centennial Office which will coordinate and implement the various events. Former Dean, Dr. Mark Allam, is honorary chairman. Among

other events, the Centennial Year will feature a University Convocation to award honorary degrees, a two-day scientific program, and a gala ball. In the next issue of *Bellwether* we will list a complete calendar for the year. If you have questions about the Centennial Year, please contact Dr. Martin at (215) 898-3525.



New logo designed for the School's centennial.

Rosettes & Ribbons



Members of the laboratory of parasitology played important roles in the Fifth International Congress of Parasitology held in Toronto, August, 1982. Those presenting papers were: **Drs. Jay Farrell, Robert Grieve, Colin Johnstone, Gerhard Schad, and David Weiner.** Others from the faculty who participated were **Drs. John Fetrow and Lawrence Glickman.** Dr. Schad chaired a section on zoonosis.

Dr. Meryl Litman, instructor in medicine, completed her board certification examination given by the American College of Veterinary Internal Medicine in the summer of 1982.

Dr. Joan Hendricks, postdoctoral fellow and resident in medicine, has received a three-year National Institute of Health grant to study the respiratory and central nervous system abnormalities associated with sleep disorders in animals.

Dr. James Buchanan, professor of cardiology, was named principal investigator of a National Institute of Health grant titled, "Calcification Mechanisms in Cardiovascular Prostheses." This is a three-year grant in cooperation with Temple University and Thomas Jefferson University.

Dr. Donald F. Patterson chose a most unusual approach to summarize the proceedings of the "International Symposium on Animal Models of Inherited Metabolic Disease." Rather than use the traditional style of summary, Dr. Patterson delivered his remarks in original verse! Considering that the papers presented ranged from "Mucopolysaccharidoses" to "Some Animal Models of lysosomal Storage Diseases," this was a formidable task. Commenting on a paper involving gene structure, organization, and expression, Dr. Patterson offered this: "... Eu-genes are in pieces—they're really quite split A Eu-genes got introns in the middle of it. ... And this complication leads us to more: ... RNA now needs cutting and splicing before It can serve as a template, appropriate to The making of proteins. That's *one* thing we knew" Dr. Patterson reveals that he writes verse (mainly about medical things) as a hobby. "Write on" Shakespeare!

Dr. Kenneth C. Bovee, Corinne R. and Henry Bower Professor of Medicine and chairman, department of clinical studies (Philadelphia), was the chief speaker at the postgraduate refresher course on Nephrology and Urology, August 9-13, 1982, at the University of Sydney, Australia. The course was attended by veterinarians from all states of Australia and New Zealand.

Dr. Mark W. Allam, former dean, will deliver the Annual Mark Allam Lecture at the meeting of the American College of Veterinary Surgeons in February 1983.

As we go to press we have been informed that **Dr. Mark W. Allam** has been elected an Honorary Associate of the Royal College of Veterinary Surgeons. This information reached us via Dr. Lawson Soulsby, former professor of parasitology who is now at Cambridge University. The induction ceremony for Dr. Allam will be in London on June 7, 1983. Our heartiest congratulations to Dr. Allam!

Dr. E. Neil Moore, professor of physiology, is the co-author (with Joel Morganroth, Thomas Jefferson University) of a text entitled *The Evaluation of Beta Blocker and Calcium Antagonist Drugs* (Martinus Nijhoff, The Hague, The Netherlands and Hingham, Maine).

The Veterinary School, in cooperation with Chung-Ang University, Seoul, Korea, has established a Postdoctoral Fellowship program. In this arrangement, "Chung-Ang University will annually nominate a maximum of two Postdoctoral Fellows (D.V.M., Ph.D., M.D., or equivalent) of high quality for collaboration with the Professorial Faculty members at the University of Pennsylvania." Fellows will ordinarily devote not less than one full year to the program, and in order to be accepted must have firm faculty commitments upon return to Korea.

Dr. Ralph Brinster, Richard King Mellon Professor of Physiology, is featured on the cover of the September 1982 issue of the prestigious journal, *Cancer Research*. In his research, Dr. Brinster injected single embryonal carcinoma cells into the blastocytes of homologous mice, and then transferred the injected blastocytes into the uteruses of pseudo-pregnant mice. Chimeric mice occurred in the resultant litters, as evidenced by coat-color mosaicism. Cancer cells were thus regulated to behave like normal embryonic cells, which took part in the normal development of the skin.

Dr. Benjamin Brackett, professor of animal reproduction, had a full calendar of speaking engagements this past fall. On September 30, 1982, he spoke at the University of Virginia School of Medicine on "In vitro Fertilization in the Rabbit and Cow." On November 4, Dr. Brackett presented a seminar titled "Practical Advances in Reproductive Biology" at the Department of Animal Science, University of Delaware, and on November 9 he spoke on "Sperm Fertilizing Ability in vitro" at Johns Hopkins University.

Education Workshops at the Philadelphia Zoo

ZOO VET

Adults

Mondays, February 14, 21

7:00-9:00 pm

\$16 Members; \$24 nonmembers

A bird with a broken wing, a lame giraffe, an alligator with a toothache or an aged gorilla ... all zoo veterinarians must be prepared for anything. Join our vet for a pair of informal lectures on the routine, preventive and emergency medical care of exotic Zoo animals. Special option: you can schedule yourself to observe a weekday veterinary procedure.

ENDANGERED SPECIES

Adults

Wednesdays, January 19, 26, February 2, 9

7:00-9:00 pm

\$32 members; \$48 nonmembers

Animal and plant species are disappearing at an alarming rate. It is estimated that one million more species will become extinct by the year 2000. Examine the causes—and possible cures—for this serious situation. Take a look at the life styles of some vanishing animals with Jon Jensen, executive director of Wildlife Preservation Trust International.



Resources

Veterinary Hospital of the University of Pennsylvania (VHUP)

Regular business hours at the Small Animal Hospital are from 9 a.m. to 4 p.m., Monday through Friday. Appointments for the clinics can be made by calling (215) 898-4680. The Emergency Clinic is open 24 hours a day and can be reached by calling (215) 898-4685. The business office, which handles billing, can be reached by calling (215) 898-8884.

The Clinic days are:

Behavior: The clinic can be reached for discussion of behavior problems and appointments by calling 898-4525.

Cardiology: Wednesday-Friday

Dental Clinic: Monday, p.m.

Dermatology and Clinical Immunology: Tuesday-Friday

Medicine: Monday-Friday

Medical Genetics, Pediatrics, Reproduction: Monday, Tuesday

Neurology: Wednesday, and other days by special arrangement with the referring veterinarian.

Oncology: Monday

Ophthalmology: Monday

Orthopedics: Wednesday, Friday. This section only accepts appointments after the referring veterinarian contacts the Small Animal Hospital to explain the specifics of the case.

Soft Tissue Surgery: Monday-Thursday

Wildlife Services: The Wildlife Service offers veterinary care for wildlife and unowned animals such as pigeons, hawks, owls, squirrels, rabbits, and groundhogs found abandoned and in need of veterinary care. During regular hours call (215) 898-4680 or 898-4685. For information contact Dr. William Medway, 898-7891.

Canine Epilepsy Service: This service assists veterinarians and owners of epileptic dogs in the monitoring and control of seizures. For detailed information about the program call Dr. George Farnbach, (215) 898-6858.

Medical Genetics/Pediatrics/Reproduction Services

Genetics: The genetics service is for the examination of animals for which genetic counseling or special studies relating to genetic diagnosis is required. Clinical objectives are related primarily to diagnosing the underlying genetic defect in a particular animal or family, and to providing genetic counseling to veterinarians and breeders in dealing with hereditary disease problems on a practical level.

Pediatrics: This service includes evaluating the growth and development of puppies and kittens, nutrition counseling, parasitism treatment, managing routine immunization against common infectious agents, and diagnosing and treating diseases of young animals, in general.

Reproduction: The reproductive service includes the diagnosis and treatment of infertility and other reproductive problems. Laboratory services include hormonal assays, semen analysis, and vaginal cytology.

Cytogenetics and Metabolic Disease Laboratory: This laboratory provides tests important in the diagnosis of genetic disease, including chromosome analyses and selected biochemical tests for inborn errors or metabolism.

EVENTS

February

19

Radiology: Survey and Contrast Radiographic Techniques and Interpretation Workshop*
School of Veterinary Medicine, Philadelphia, PA, 9 a.m.-5 p.m.

21

Western States Conference, Alumni Reception,
Las Vegas, NV

March

10

Bovine Viral Diseases*,
New Bolton Center, Kennett Square, PA, 9 a.m.-5 p.m.

13

AAHA National Meeting, Alumni Reception,
San Antonio, TX

26

Necropsy Techniques and Interpretation of Gross Lesions*,
School of Veterinary Medicine, Philadelphia, PA, 9 a.m.-5 p.m.

26

Feline Symposium for Owners and Breeders,
Philadelphia, PA, 9 a.m.-5 p.m.

April

6

Feline Uro-Genital Surgery,
School of Veterinary Medicine, Philadelphia, PA, 9 a.m.-5 p.m.

9

Student/Faculty Dinner Dance,
New Bolton Center, Kennett Square, PA

13

New Jersey VMA Annual Meeting, Alumni Reception,
Atlantic City, NJ

16

New Bolton Center Open House,
Kennett Square, PA

23

Equine Lameness Seminar*,
New Bolton Center, Kennett Square, PA, 9 a.m.-5 p.m.

23

SCAVMA, PVMA, Alumni Picnic,
Barbecue Pit, New Bolton Center, Kennett Square, PA, 12 noon

27

Canine Uro-Genital Surgery*,
School of Veterinary Medicine, Philadelphia, PA, 9 a.m.-5 p.m.

28

Upjohn Senior Dinner,
New Bolton Center, Kennett Square, PA

30

Chester County Health Department Rabies Immunization Clinic,
New Bolton Center, Kennett Square, PA

May

2

Spring Faculty Meeting,
New Bolton Center, Kennett Square, PA

7

Upjohn Senior Breakfast,
New Bolton Center, Kennett Square, PA

18

Health and Economic Programs for the Large Dairy Herd*,
Baltimore Hilton Inn, Baltimore, MD, 9 a.m.-5 p.m.

21

Alumni Day,
New Bolton Center, Kennett Square, PA

23

Commencement

June

2

Retirement Dinner,
New Bolton Center, Kennett Square, PA

19

AVMA National Meeting, Alumni Reception,
New York, NY

More Resources

Clinical Immunology Laboratory offers the following services:

Immune Function tests

- Serum Protein Electrophoresis
- Immunoelectrophoresis
- Quantitation of Immunoglobulins
- Lymphocyte Transformation
- Bactericidal Assay

Autoimmune Disease Tests

- Coomb's Test
- Antinuclear Antibody Test
- Rheumatoid Factor Test
- Immunofluorescence of Biopsies

Endocrine Tests

- Thyroid Hormones T4 and T3
- Adrenal Hormones

Miscellaneous

- Parvovirus Antibody Titers
- Fungal Immunodiffusion
- Feline Leukemia Virus (ELISA)

For additional information and a complete list of services and charges, please contact the Clinical Immunology Laboratory, (215) 898-6882.

Laboratory of Microbiology: Services are offered for the following diagnostic procedures:

Bacterial culture and sensitivity

MIC testing on urinary isolates

Fungus culture

Fecal screens for Salmonella and Campylobacter spp.

Bacterin preparation

Serology:

B. Canis slide and tube agglutination

IHA for Toxoplasma and gondii

Leptospira agglutination testing

Immunodiffusion for Histoplasma and Blastomyces

For further information, please contact Ms. Harriet Izenberg (215) 898-7858.

Nephrology Laboratory: Urinary calculi specimens may be submitted for quantitative analysis to the nephrology laboratory, c/o Dr. K. Bovee. A three-week period is customary for a report. Charge \$20.

Laboratory of Pathology: Service is offered in diagnostic pathology. The biopsy fee is \$12; additional tissues at \$3 each. The maximum charge for multiple tissues is \$75. Practitioners will be provided with prepaid mailers for submission of specimens. For information please contact Dr. Michael Goldschmidt, (215) 898-8857.

Parasitology Laboratory: Services are offered for unusual parasitological problems, especially those involving exotic animals. It also offers ELISA serology to detect heartworm in dogs (\$10). For additional information please contact Dr. Robert Grieve, (215) 898-5646.

Laboratory of Virology: A service has been instituted for diagnosing viral diseases of felines and canines. The infections of felines include those with calici virus (upper respiratory disease), herpes virus (rhinotracheitis) and parvovirus (panleucopenia). Canine infections include those with adenovirus 1 (infectious hepatitis), adenovirus 2 (laryngotracheitis), corona virus (diarrheal disease), parainfluenza virus (kennel cough), herpes virus, and distemper virus.

For more specific information contact Dr. Florence Lief (215) 898-3365 or 898-3319, or Dr. Larry Glickman (215) 898-3161.

Radiology: Appointments can be made by calling (215) 898-8863. Radiation therapy is scheduled through the oncology clinic.

Hospital Tours: Arrangements can now be made to tour the new facility of the Veterinary Hospital of the University of Pennsylvania. Tour groups are scheduled every Wednesday, 1:30 p.m., and are limited to ten participants. Groups will be guided by members of the Volunteer Tour Guides. Tours are available by appointment only. Reservations can be made by calling M. Josephine Deubler V.M.D., at (215) 898-4680.

Bellwether

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